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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,581	03/31/2004	Michael J. Antal JR.	UOHIP006D1	9383

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EXAMINER

DOROSHENK, ALEXA A

ART UNIT PAPER NUMBER

1764

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/815,581

Applicant(s)

ANTAL, MICHAEL J.

Examiner

Alexa A. Doroshenk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 20-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/21/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The abstract of the disclosure is objected to because describes a process while an apparatus is being claimed. Correction is required. See MPEP § 608.01(b).
2. The title of the invention is not descriptive of the claimed invention. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Apparatus for Flash Carbonization of Biomass.

3. The disclosure is objected to because of the following informalities:

The status of divisional application 10/152,276 should be updated as it is now Patent No. 6,790,317.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 20-24 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: "a heater" and any connection with any other element of the claim. Is the heater inside the canister? Inside the housing? Attached externally?

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 20-22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Antal Jr. et al. ("High-Yield Biomass Charcoal" from Energy & Fuels 1996, Vol. 10, Number 3, pages 652-658) in view of Bergman (WO 98/51434).

With respect to claim 20, Antal Jr. et al. discloses a reactor (figure 2) which comprises a housing (pressure vessel) with a sealable opening (pressure-tight hinged closure) for receiving a removable canister with a lid; heaters; a first valved exit orifice (3) at a proximal end (1) and a second valved exit (4) orifice at a distal end (2) of the housing (pressure vessel); and a valved entry orifice (5) at the proximal end (1) (page 653, col. 2, paragraph under "Apparatus and Experimental Procedures").

Figure 2 of Antal Jr. et al. does not provide reference numbers, so the examiner has numbered various elements below to provide further clarification of how the reference has been applied.

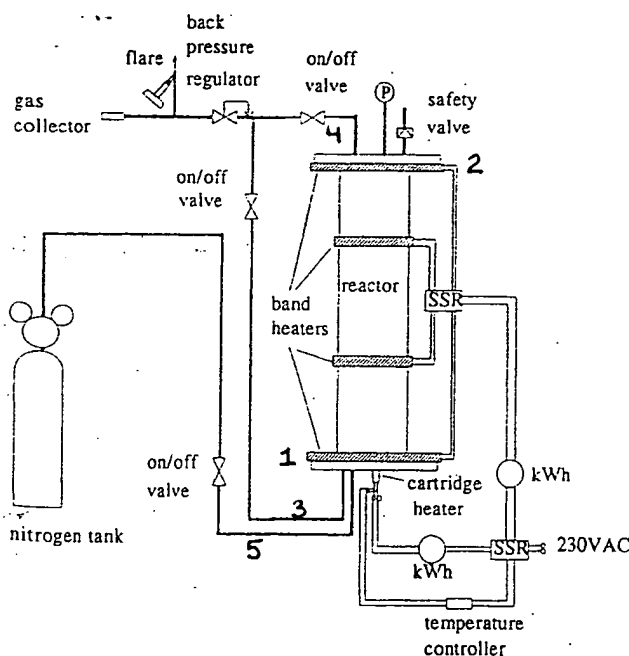


Figure 2. Schematic of the laboratory reactor.

The canister having a lid and by being lowered into the pressure vessel would result in minimal exposure of the canister contents to the atmosphere (page 653, col. 2, paragraph under "Apparatus and Experimental Procedures").

Antal Jr. et al. fails to disclose any insulation in the device.

Bergman also teaches a pressure vessel (1) with a removable carrier (5) and heating devices (13) placed within the vessel (1) and provides insulation (4) so that it surrounds at least a portion of the carrier (5) (figure 1) so that heat dissipation to the surrounding pressure vessel wall is low (p. 5, line 22 –p. 6, line 20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide

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insulation to the canister within the pressure vessel of Antal Jr. et al., as taught by Berman, in order to prevent dissipation of heat to the pressure vessel wall.

With respect to claim 21, Antal Jr. et al. further discloses wherein the heaters are resistance heaters (page 653, col. 2, paragraph under "Apparatus and Experimental Procedures") and heat the distal end (2) of the canister (fig. 2).

With respect to claim 22, Antal Jr. et al. further discloses wherein a flare (burner) is in communication with the second valved exit (4) (see figure 2).

With respect to claim 24, the schematic illustration of Antal Jr. et al. has been applied so that the proximal end (1) is at the bottom and the distal end (2) is at the top of the vertically arranged device shown in figure 2. The device of Antal Jr. et al. arranged so that the proximal end (1), and its associated elements, is at the top while the distal end (2), and its associated elements, is at the bottom of the vessel would still be the same apparatus (only turned on end). It appears from the description of the operation of Antal Jr. et al.'s device, that in such an orientation, the device would continue to be operational. It has been held that there is no invention in shifting the location of parts when the operation of the device would not thereby be modified. In re Japikse, 86 USPQ 70 (CCPA 1950).

8. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Antal Jr. et al. ("High-Yield Biomass Charcoal" from Energy & Fuels 1996, Vol. 10, Number 3, pages 652-658) in view of Bergman (WO 98/51434) as applied to claim 20 above, and further in view of Kippelman (5,290,523).

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The schematic of the apparatus of Antal Jr. et al (figure 2) only illustrates that the valved entry (5) passes into the proximal end (1) but fails to illustrate if it extends into the canister.

Koppelman discloses a method and apparatus for upgrading carbonaceous fuel which heats and pressurizes (col. 10, lines 24-40) bio-mass material to transform it into charcoal (col. 11, lines 17-19). Koppelman further teaches wherein preheating the inert gas feed results in reductions in overall operation time (col. 8, lines 52-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to extend the feed line of Antal Jr. et al. into the canister so that the heat of operation would preheat the nitrogen feed in order to achieve reductions in operation time as taught by Koppelman.

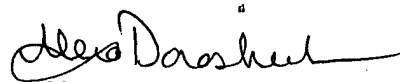
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenk whose telephone number is 571-272-1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alexa A. Doroshenk  
Examiner  
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